

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the present application.

IN THE CLAIMS:

1. (Currently Amended) An isolated nucleic acid which comprises a polynucleotide encoding a protein that binds a D-galactosyl group through the  $\alpha(1\rightarrow6)$  bond to the hydroxyl group attached to the carbon atom at 6-position of the D-glucose residue in a sucrose molecule to form raffinose, wherein said polynucleotide comprises a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 1,

(b) a nucleotide sequence as depicted in SEQ ID NO: 2,

(c) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 3,

(d) a nucleotide sequence depicted by the 236<sup>th</sup> to 2584<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 4,

(e) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 5,

(f) a nucleotide sequence depicted by the 134<sup>th</sup> to 2467<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 6,

(g) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 7,

(h) a nucleotide sequence depicted by the 1<sup>st</sup> to 1719<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 8,

(i) a nucleotide sequence ~~obtainable~~ obtained from a polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from soybean with a combination of a PCR primer of SEQ ID NO: 9 and a PCR primer of SEQ ID NO: 10, wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of (a) or (b), in a buffer comprising 0.9M NaCl and 0.09M citric acid at 65°C to 68°C,

(j) a nucleotide sequence ~~obtainable~~ obtained from a polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from a *Chenopodiaceae* plant with a combination of a PCR primer selected from the group consisting of SEQ ID NO: 11 and SEQ ID NO: 13 and a PCR primer selected from the group consisting of SEQ ID NO: 12 and SEQ ID NO: 14, wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of (c) or (d), in a buffer comprising

0.9M NaCl and 0.09M citric acid at 65°C to 68°C, and

(k) a nucleotide sequence ~~obtainable~~ obtained from a polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from a *Cruciferae* plant with a combination of a PCR primer selected from the group consisting of SEQ ID NO: 15, SEQ ID NO: 17 and SEQ ID NO: 19 and a PCR primer selected from the group consisting of SEQ ID NO: 16, SEQ ID NO: 18 and SEQ ID NO: 20, wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of any one of (e) to (h), in a buffer comprising 0.9M NaCl and 0.09M citric acid at 65°C to 68°C.

2. (Previously Presented) An isolated nucleic acid comprising a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 1.

3. (Previously Presented) An isolated nucleic acid comprising the nucleotide sequence as depicted in SEQ ID NO: 2.

4. (Previously Presented) An isolated nucleic acid comprising a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 3.

5. (Previously Presented) An isolated nucleic acid comprising the nucleotide sequence depicted by the 236th to 2584th nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 4.

6. (Previously Presented) An isolated nucleic acid comprising a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 5.

7. (Previously Presented) An isolated nucleic acid comprising the nucleotide sequence depicted by the 134th to 2467th nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 6.

8. (Previously Presented) An isolated nucleic acid comprising a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 7.

9. (Previously Presented) An isolated nucleic acid comprising the nucleotide sequence depicted by the 1st to 1719th nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 8.

10. (Previously Presented) An isolated nucleic acid comprising the nucleotide sequence as depicted in SEQ ID NO: 4, SEQ ID NO: 6,

or SEQ ID NO: 8.

Claims 11-15. (Canceled).

16. (Previously Presented) An isolated nucleic acid comprising a nucleic acid of claim 1, which is joined to a promoter.

17. (Previously Presented) A vector comprising the nucleic acid of claim 1.

18. (Previously Presented) A transformant, wherein the nucleic acid of claim 1 is introduced into a host cell.

19. (Original) A transformant, wherein the nucleic acid of claim 16 is introduced into a host cell.

20. (Original) A transformant, wherein the vector of claim 17 is introduced into a host cell.

21. (Previously Presented) The transformant of claim 18, wherein the host cell is a microorganism.

22. (Previously Presented) The transformant of claim 18, wherein the host cell is a plant cell.

23. (Previously Presented) A method for producing a raffinose synthase which comprises the steps of:

culturing or growing the transformant of claim 18 to produce the raffinose synthase, and  
collecting the raffinose synthase.

Claims 24-27. (Canceled).

28. (Previously Presented) The nucleic acid of claim 16, wherein said promoter is effective in a plant cell.

29. (Previously Presented) The nucleic acid of claim 16, wherein said promoter is effective in a yeast cell.

30. (Currently Amended) An isolated nucleic acid which comprises a polynucleotide encoding a protein that binds a D-galactosyl group through the  $\alpha(1\rightarrow6)$  bond to the hydroxyl group attached to the carbon atom at 6-position of the D-glucose residue in a sucrose molecule to form raffinose, wherein said

polynucleotide comprises a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 1,

(b) a nucleotide sequence as depicted in SEQ ID NO: 2,

(c) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 3,

(d) a nucleotide sequence depicted by the 236<sup>th</sup> to 2584<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 4,

(e) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 5,

(f) a nucleotide sequence depicted by the 134<sup>th</sup> to 2467<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 6,

(g) a nucleotide sequence encoding the amino acid sequence as depicted in SEQ ID NO: 7,

(h) a nucleotide sequence depicted by the 1<sup>st</sup> to 1719<sup>th</sup> nucleotides in the nucleotide sequence as depicted in SEQ ID NO: 8,

(i) a nucleotide sequence ~~obtainable~~ obtained from a

polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from soybean with a combination of a PCR primer of SEQ ID NO: 9 and a PCR primer of SEQ ID NO: 10, wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of (a) or (b), in a buffer comprising 0.9M NaCl and 0.09M citric acid at 65°C to 68°C,

(j) a nucleotide sequence ~~obtainable~~ obtained from a polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from beet with a combination of a PCR primer selected from the group consisting of SEQ ID NO: 11 and SEQ ID NO: 13 and a PCR primer selected from the group consisting of SEQ ID NO: 12 and SEQ ID NO: 14, wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of (c) or (d), in a buffer comprising 0.9M NaCl and 0.09M citric acid at 65°C to 68°C, and

(k) a nucleotide sequence ~~obtainable~~ obtained from a polynucleotide which is ~~amplifiable~~ amplified from a nucleic acid obtained from a Brassica Cruciferae plant with a combination of a PCR primer selected from the group consisting of SEQ ID NO: 15, SEQ ID NO: 17 and SEQ ID NO: 19 and a PCR primer selected from the group consisting of SEQ ID NO: 16, SEQ ID NO: 18 and SEQ ID NO: 20,



wherein said nucleotide sequence ~~is hybridizable~~ hybridizes with a nucleotide sequence complementary to the nucleotide sequence of any one of (e) to (h), in a buffer comprising 0.9M NaCl and 0.09M citric acid at 65°C to 68°C.